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County Parks.

MANY of the justifying reasons for the establishment of parks in cities will not apply to the conditions of country life. There is no need in the country of spacious open areas as antitheses to closely built stone blocks; there is no need to provide spaces for the admission of air and sunshine; there is no need of providing grass and trees as a refreshment to eyes and minds wearied by the constant prospect of rigid and rectangular enclosures. Nevertheless, grounds for associated recreation are quite as desirable in the country as in the city, and since the commons of our earlier history have gradually passed under private control there is an increasing need of provision for associated recreation which can only be met by devoting certain lands to public use forever. Of course, this is not a novel idea, but it is one which is rarely presented, and we are, therefore, glad to see that in a late bulletin from the Natural History Laboratories of the State University of Iowa the subject is discussed by Professor T. H. Macbride, who sets forth certain reasons why County Parks, as he calls them, should be established, especially in the western states. By a county park he does not mean simply public land like that owned by Government, which can be claimed and plundered by the first comer, nor, indeed, land which can be made use of by the public indiscriminately and without restriction, but land devoted specifically to public enjoyment as a holiday-ground for all the people, rich and poor. In most of our older towns and villages there are to be found greens or squares; annexed to a few of them there are public groves for picnics and other open-air festivities; but what is particularly meant here is a space belonging to a larger community, like a county or several adjacent townships, which would be sufficiently attractive to invite farmers and others who live within a radius of some miles, and large enough to accommodate several parties at once with their vehicles. Of course, such a place should be well watered and there should be woods for shade, and if it contains some romantic glen or waterfall, or other picturesque feature, it would be so much the better. Professor Macbride argues that such parks are needed at once—in Iowa, at least—and that they would have a genuine educational value both on the scientific and ethical side, and would minister directly to the health and happiness of the community.

In the first place it is urged that the usual experiences of country life are even more weary and monotonous than the conditions of city life. In the farm, and shop, and mine, day after day, season after season, year after year, there the same ceaseless round of toil is repeated, and into it no idea of recreation or refreshment ever enters. A sad picture is painted of the effort of the rural population of the west to outwear its labor-saving machinery, but every observer will testify that this remorseless grind is quite as serious an evil in the east, and that unless something is done to brighten life in the rural districts and preserve the mental and physical health of the people, the generations which follow this will see its effects in dwarfed minds and infirm bodies. The farmer and his family come in constant contact with nature, it is true, but their days are passed in painful efforts to wrest a living from the land, to struggle against untoward conditions of climate and to fight for existence with other forms of life continually. If country people could be lured into a pleasure-ground to spend a day now and then in social mood among the grass and trees and free from care, the practice would, no doubt, have an inestimable recuperative value.

It is not apparent how such county parks could be made useful to furnish lessons in forestry, as Professor Macbride suggests, but every one will agree with him that a well-kept county park would be a perpetual object-lesson in the best means of preserving and enhancing the essential landscape beauty of any given area, and that this would suggest ways of making home-grounds attractive. That little thought is given to this matter in any part of the country is a matter of common notoriety. This is so unusually true that a farmhouse well adapted to its use, built to harmonize with its surroundings, and with grounds planned and cared for so as to develop all that is naturally attractive in the home-scene is so rare as to excite comment at once.

The third reason for the establishment of county parks—in the west, at least—is most interesting. In the older eastern states it is a matter of lamentation that nothing except the bolder original features of the country remain to show what its primitive form and beauties were. The native animals are often extinct, many of the plants are on the way to extermination, the primeval woods are gone. In the more newly settled portions of the country there are places which are still occupied by the original flora, and these can now be rescued before they are laid waste. This is a matter of importance, both from the standpoint of science and of intellectual progress, for it is well said that "such is the aggressive energy of our people, such their ambition to use profitably every foot of virgin soil, that unless somewhere public reserves be constituted our so-called civilization will soon have obliterated forever our natural wealth and leave us to the investigation of introduced species only or chiefly." No doubt, the organization of county parks would preserve many of these localities as they were, and the very names that are given to some places in Iowa for possible reservations kindle the imagination and suggest scenes of picturesque beauty of cliffs and glens, cool springs and foaming brooks, groves of Pine and wooded hills. There is little doubt that even in the so-called prairie states there are picturesque places in almost every county which would make ideal spots for public recreation-grounds.

How such parks could be cared for is the serious question. New York, following the example of Massachusetts, has a general law in which places of great natural beauty, as well as of historic interest, can be set apart for public use forever. It would not be difficult to frame laws which would enable a county or a township to hold land for public use. The life of the early settlers of the country was a long fight against inhospitable conditions, so that Americans seem to have inherited a tendency to destroy everything that is natural. But we apprehend that the employment

of a few caretakers clothed with police authority would be all the protection needed until the people began to appreciate the value of a public playground, and the strong public sentiment for protecting it would soon be established. In older countries the people have the freedom of many of the most splendid parks and woods in the world. The greens or squares in our little villages are not defaced, for everybody cares for them and public buildings suffer little wanton defacement. The same would probably be true of larger grounds, so that the necessary requirements and restrictions in their use would be obediently and gratefully complied with as soon as the people realized that these grounds were their own, and that they were dedicated forever to the enjoyment of themselves and their children.

The remarkable increase of bicycle riding in the past year adds a new menace to suburban gardens and orchards. Bicycle riders returning to town from the country with big bunches of flowers tied to their handlebars are familiar objects in the suburbs of all our large cities. It is safe to assume that a large part of these flowers have been gathered without the consent of their owners. Pilfering of this sort is often the result of ignorance or thoughtlessness, and the press of the country can do a real service in teaching a stricter morality than now prevails in the United States upon this point. Flower-stealing, however, is not always the result of ignorance, and it is not an uncommon sight to see women driven by liveried servants with carriage-loads of stolen flowers. Such women have not the excuse of poverty to plead in explanation of their thefts, and no amount of teaching, unless it comes through the judges of police courts, will enlighten their minds on this point. People who grow flowers are always willing to share them with their less fortunate neighbors, as the success of the flower missions throughout the country abundantly proves, but no one, however public-spirited or generous, likes to be taken advantage of or to see his trees and shrubs broken to pieces, or to feel that any rare or interesting plant, whose development he is watching, may be pulled up by some vandal who is very likely to throw it away again before he has carried it a hundred yards, thus adding insult to injury. This ignorance and lawlessness, where plants and flowers are concerned, are serious drawbacks to the cultivation of gardens near our cities, and they cast well-deserved reproach on people who would not take five cents' worth of anything else which did not belong to them. This evil is increasing every year, and it is liable to increase until public sentiment against it is thoroughly aroused, and laws against depredations of this character are promptly and rigorously enforced.

Hemlock for the Tanneries.

In north-western Pennsylvania the bark-peeling of the Hemlock-trees begins early in May and continues through the summer until the middle of August, and during that time thousands of trees are destroyed and miles of rich woodland denuded. There is no more destructive process to the wooded sections of the country than that of bark-peeling, and unless something is done soon the fine forests of Hemlock in Jefferson, Clearfield, Elk, McKean, Warren, Forest, Cameron and Potter counties will be destroyed from the face of the earth. In recent years the discovery and cultivation of Canaigre in the south-west have promised some abatement of the injury to the forests, but it will be a long time before the Hemlock will cease to be the most profitable source of tannic acid.

Several large tanneries have been erected in the northern tiers of counties, and since 1872 the industry has been a large and thriving one here. Several of them consume the hemlock bark that grows on a thousand acres of woodland every year. When the first tanneries were erected the trees were stripped of their bark while standing and left to die and decay in this condition. There may be seen miles and miles of these skeleton trees to-day, but such a wasteful process is no longer pursued. When the Pine timber of Pennsylvania became exhausted, a new value was given to the Hemlock-trees, since the owner of the sawmill will not only sell the lumber but supply the tanneries with bark. In some cases the tanneries erect their own sawmills.

An early spring starts the sap in May and loosens the bark so that it can be peeled off easily. Then the men go into the woods by the hundred. The bark-peeling is done altogether by contract. One contractor engages his men, and makes an agreement with the tanneries to supply so many cords of bark. The contractor has to cut roads through the woods that will admit of sleighs in winter and carts in summer, and the products of his men's labor must be piled close to these roads. His contract is a cast-iron one, and he has to live up to it to the very letter. A cord, according to the tanneries, contains 2,200 pounds, and when measured in volume it must be eight feet long, four feet high and four feet wide. Sometimes the contractor agrees to cut and cure the bark by weight, and then much bark can be used that is not the regulation length of four feet.

It takes about two thousand feet of logs to peel a cord of bark, and on the average in the Hemlock forests of northern Pennsylvania it takes one acre to produce ten cords of bark and 20,000 feet of logs. The contractor makes roads through the forests about sixty feet apart, and the logs and bark are piled between them. When the forest runs up on the sides of the hills and mountains the felled trees have to be trimmed and carted down to the roads in the valley, making the work doubly difficult. The peelers go into the woods in gangs of four and cut down the trees, trim off the limbs, peel the bark off, and cut them into the proper size logs. Each gang is composed of two log-cutters, one spudder and one fitter. The fitter goes first and selects his tree and cuts a ring around it through the bark close to the roots, and then another four feet up; the bark is then split down one side from ring to ring, and the spudder comes along and inserts his spud into the slit; with a few deft strokes he peels off the whole piece of bark as clean as a boy rings a chestnut-whistle when the sap is flowing in the spring of the year.

The choppers then follow, and with their axes and saws they soon bring the tree to the ground. The tree is trimmed when it has fallen. The fitter measures off the bark on the giant tree, and the spudder peels it off the same as before, and then the logs are cut to the length desired.

In this way the gangs of men will go through the Hemlock forests, each set of four peeling off from five to eight cords of bark a day and cutting the trees up into logs. One such gang will peel 250 cords of bark in a season and cut half a million feet of logs. The sawmills are ready to work as soon as the bark-peeling begins, and one good mill will eat up the logs from 250 acres in one year. The hemlock lumber cut in northern Pennsylvania in this way amounts to over 80,000,000 feet in a season. This means that over 40,000 cords of bark are peeled and 4,000 acres of forests stripped in a year.

The fitters, spudders and wood-choppers in the Hemlock forests receive only moderate wages, although the work is probably the hardest connected with lumbering. The ruling prices paid to bark-peelers is $1.25 per day and board, but good spudders can secure $2.00. The jobber who takes the contract receives about $1.35 to $1.50 per cord for gathering the bark, and from forty to fifty cents a thousand for the cut logs. This jobber then employs his men, and expects to make his wages in getting good work out of them. The tanners own most of the woods, and these prices are merely paid to the men for gathering the bark and cutting the logs. The bark-peelers are a typical class of men, who make their wages in gathering the hemlock-bark in summer and live by gunning and doing odd jobs in winter.

The hemlock industry has indirectly helped farming in this region, for it has created a home market for many of the farmers' small products. In the bark-peeling season there are thousands who come to the woods who buy their butter, eggs, cheese, fresh fruits and vegetables direct from the surrounding farmers. Many farmers who owned Hemlock tracts sold them to the tanneries for good prices, and others merely sold the trees on the land, and had the pleasure of seeing their farms cleaned of the trees. It is true that the stumps remained, but these were burnt or rooted out by degrees. More than this, a few of the farmers, seeing the great inroads made into the forests, cultivated the young Hemlock saplings and even planted others, and in time there may be a new industry for them in forest-planting. In the winter season the hemlock-bark has to be carted to the tanneries, and the local farmers find that they can take their teams into the woods and make good wages in a season of the year when farm-work is at a standstill. Many a farmer has made enough cash in this way to pay off mortgages and buy new machinery for his work.

The tanners have naturally made the most profits out of the woods. This is no more than any one could expect, as they invested the capital and did most of the head-work. The price paid by them for the bark has run all the way from $3.00 to $6.00 per cord, but never more than the latter figure, and thousands of cords have been sold by them all the way from $10.00 to $15.00 per cord. At present, however, there is less profit in the business, and old prices may never return again.

New York. *G. E. W.*

Foreign Correspondence.

Tulips.

MR. J. G. BAKER, F.R.S., lectured at the last meeting of the Royal Horticultural Society on the genus Tulipa, the botany of which has been a special study with him for many years. A large collection of the flowers of Tulips, representing both species and garden varieties, was sent to the meeting from Kew, Messrs. Barr & Sons, Messrs. J. Veitch & Sons and others. The time was in every sense propitious, Tulips generally being at their very best, and the display made by them in public and other gardens this year being very much greater than anything, perhaps, ever seen before in the neighborhood of London, at any rate. The every-day, somewhat gaudy Tulips of the Dutch gardens are being gradually supplanted here by more beautiful sorts. English Tulips and their sisters, the Darwin Tulips, are finding general favor. The botanical varieties and many of the species or subspecies are also becoming favorites in horticulture. English nurserymen are now growing them largely, for the Tulip is quite at home under the conditions afforded in most parts of England. The display it makes is of fairly long duration, and the charm of the best flowers is equal to anything we get from hardy spring flowers.

Mr. Baker admits about one hundred distinct botanical species, some of these being, perhaps, only subspecies, in a broad sense. When he monographed them about twenty years ago there were only forty-eight, but since then about fifty additions have been made, chiefly by Russian collectors. This accounts for the unattractive names many of them bear, such as Kolpokowskiana, Kesselringii, Kaufmanniana, Ostrowskyana, etc. About fifty species are cultivated in the Royal Gardens, in addition to a large number of the named varieties, and for the past three weeks or so they have been a magnificent feature.

The genus is limited in its distribution to the north temperate regions of the Old World, being concentrated in central China. It is represented in North America by the nearly allied Calochortus; these two genera, Calochortus and Tulipa, together having the same distribution as Lilium.

The genus Tulipa is divided into two sections, namely, Eutulipa, the true Tulips, and Orithyia, the latter being characterized by a short style, the true Tulips having the stigma sessile on the top of the ovary. The Orithyias are only of botanical interest, T. sylvestris, the little yellow-flowered native, being the only one met with in gardens. The characters relied upon to distinguish the species are in the bulbs as well as in the flowers, so that botanists are sometimes at a loss when asked to determine the species from flowers and leaves alone. Most of the big-flowered handsome garden Tulips belong to the group represented by T. Gesneriana, of which an enormous number of forms are known, some wild, some of garden origin. This species has been a favorite garden flower for over two hundred years, all the old Tulips, out of which what is known as the Tulip mania had its origin, being forms of T. Gesneriana. Mr. Baker is inclined to look upon such so-called species as T. Ostrowskyana, T. Batalini and T. Schrankii as wild forms of this ancient, polymorphic plant.

What are known as English or Breeder Tulips are selected forms of T. Gesneriana, in which the petals are unicolored, save a large eyelike blotch of yellow or white at the base of the cup. The value of the variety in the eyes of a Tulip-fancier depends upon the clearness and regularity of this eye and the uniformity of the shade or color of the rest of the flower. It is remarkable that the Darwin Tulips, the beauty of which is now generally admitted, are practically sorts which were discarded by the breeder because of the intensity or heaviness of their color and the blue-black eye at the base of the cup. They are, too, stronger and taller in scape than the English Tulip. Of their beauty it is, in my opinion, impossible to speak too highly. Messrs. Barr & Sons have about ten thousand of them in flower in their Tooting nursery, the collection exhibited by them last week being greatly admired. It is due to Messrs. Krelage & Sons, the Haarlem nurserymen, that they should be credited with the discovery and distribution of this fine section of garden Tulips. Of the many sorts in flower at Kew these Darwin Tulips are the most admired. Messrs. Barr have sorted them into about twenty colors and named them, but at Kew they are all mixed indiscriminately in a large bed on a lawn, where they produce a rich kaleidoscopic effect.

Breeder tulips are peculiar in their habit of changing color, "rectifying," as the fanciers term it, after a time. There does not appear to be any cause, time or season for this change; it may happen when the bulb is six years old or not till it is sixty, practically not at all. The change is a very decided one as regards color, those flowers with yellow eyes becoming feathered all over with that color on a ground color more or less like that of the flower before the change takes place; those with white eyes being feathered with white, the former are called Bizarres, the latter Byblœmens. The value of the rectified flower depends upon the clearness of the yellow or white, upon the regularity of the feathering or flaming, the size and form of the petals and shape of the cup being also of importance. Tulip fanciers pride themselves on having the Breeder and rectified flower side by side, and at exhibitions of Tulips they are generally placed together. When once a Tulip has "rectified" it never returns to the Breeder state; this can only be obtained by means of seeds, and from these may come all sorts except the one desired.

Long cultivation, selection, cross-breeding, etc., may account for this behavior in this species of Tulip. So far as I know it does not occur in any except Gesneriana and its near allies. A few years ago Mr. Baker named at Kew a beautiful Tulip with enormous rose-crimson flowers and a large blue-black eye-like base, calling it T. macrospila. For a time it kept true, and a large stock of it was worked up entirely from offsets. Then it began to break, first producing a paler-colored form, and afterward feathered or "rectified" flowers, in which the eye was either like the type or pure white. From this it would appear that no reliance can be placed upon the colors of some of the Gesneriana tulips. Fortunately, "rectification" does not mean deterioration, but generally a decided improvement in color attractions.

Mr. Baker called special attention to Tulip Greigii, a native of Turkestan, introduced in 1873. It has broad green leaves, spotted with dark brown and enormous flowers of a rich scarlet color, richer than in any tulip, while in the elegance of the curves assumed by the petals it is distinguished from all other species. So far, however, cultivators have not been successful with it, and it remains still a rare plant. Mr. Baker thinks it might pay to try it under various conditions in various climates. If only such a Tulip could be produced in quantity, as the Dutch, for instance, produce the common Tulips, it would be the most popular of all. American horticulturists might act upon this hint.

The cultivation of Tulips is easy, but there are several important points to be remembered, and the first of these is that if grown in the same soil for several years in succession the bulbs are apt to fall a prey to a fungus, the soil becoming what is called Tulip-sick. To avoid this it is necessary to either change the soil every three years or so, or to transfer the Tulips to other quarters. The second point of importance is that of harvesting. If the Tulips are planted in beds that are required for other plants in summer they must be lifted carefully about the end of May and "heeled in" clean coal ashes or light soil till the leaves have faded. Then the bulbs should be cleaned and laid in baskets or trays in the sun to ripen before they are finally placed in store to await replanting in October. Choice species and varieties should be lifted and replanted in a little fresh soil even when they occupy permanent positions in the garden. Some of the species, such as T. Hageri, T. linifolia and T. Eichleri, do well and look well when planted among grass in the wild garden.

London. *W. Watson.*

Plant Notes.

Leucothoë recurva.

THE value of the northern native plant Leucothoë racemosa for the decoration of the parks and gardens of the northern states has often been insisted on in the pages of this journal. It is a hardy, fast-growing shrub which sometimes attains the height of ten feet; its slender branches are covered with ample dark green leaves which late in the autumn, long after those of every other tree and shrub cultivated in gardens have fallen, assume a brilliant and beautiful scarlet color, and its handsome waxy white cup-shaped flowers are produced in long, erect or slightly curved terminal racemes from buds formed the previous autumn and covered during the winter with closely imbricated bracts. The splendor of color of the leaves of this shrub in the late autumn makes it one of the most desirable hardy plants for our northern gardens.

Although of lower stature, Leucothoë recurva, a native of the southern Alleghany Mountains and botanically closely allied to Leucothoë racemosa, is almost as desirable a garden plant. It is a shrub with slender ashy gray stems three or four feet in height, slender divaricate branches covered with bright orange-red bark, thin ovate-acute leaves and elongated spreading and recurved racemes of handsome waxy white flowers which open late in May when the leaves are about half-grown.

Leucothoë recurva inhabits shady, rather dry hillsides, and is distributed from south-western Virginia to northern Alabama, growing usually at elevations of from two to three thousand feet. Introduced into the Arnold Arboretum in 1885, whence it has been gradually distributed among the botanic gardens of Europe, it is still rare in cultivation. Mr. Faxon's drawing, reproduced in our illustration on page 225 of this issue, which is the first that has been published of this interesting shrub, is from wild specimens gathered in Virginia and North Carolina.

Cercis Canadensis.—The American Red-bud, or Judas-tree, was described two hundred years ago and was grown in English gardens as early as 1730. Like many other inhabitants of our forests, however, it has been comparatively neglected by planters in this country, although it is one of the most desirable of small trees all the season through, from the time in early spring when its deep red calyxes and rose-pink petals are clustered thickly along the branches with the opening leaves, until the autumn, when these leaves turn to a clear bright yellow. There is no more striking combination in our wood borders than these abundant flowers of the Red-bud mingled with the white ones of the Flowering Dogwood and of Cratægus mollis. We have often spoken of this tree, but we make no apology for again calling attention to it as an admirable garden plant, which is perfectly hardy as far north as New England, and is one of the most effective of trees to place against a background of dark conifers. It thrives in bottom-lands naturally and on swamp borders, but will grow in any good soil, and when allowed a chance to spread it becomes a rather low flat-topped tree, although under favorable conditions it reaches a height of fifty feet. It grows rapidly and begins to flower when it is quite small. The European Judas-tree, Cercis Siliquastrum, is not hardy in the northern states, nor is Cercis Chinensis, a shrub with large rich-colored flowers, which is often seen in gardens south of Philadelphia, where it is usually called Cercis Japonica. Like all other native plants, our Red-bud seems to harmonize with the scenery of the country in which it has developed, and it cannot be too often repeated that our native Crabs, Hawthorns and the Flowering Dogwoods and arborescent Viburnums cannot be excelled for massing and composing park pictures.

Fothergilla Gardeni.—This is another native shrub belonging to the Witch Hazel family, which has already been described and figured in this journal (see vol. viii., p. 446). It was also introduced into English gardens nearly a century and a half ago, and yet comparatively few people in this country or in Europe have ever seen it. Nevertheless, in early spring it presents a beautiful and striking appearance with its brush-like masses of long, white, conspicuous stamens produced at the end of branches before the leaves appear. It is a comparatively rare shrub of southern range, and yet it is perfectly hardy at the north, and this spring, in spite of a singularly trying winter, it has flowered with unusual abundance. It is a shrub of good habit, attaining a height of some five feet, well clothed with rich-colored foliage, and is an admirable plant all the season through.

Cultural Department.

Notes from Harvard Botanic Garden.

THE herbaceous grounds of the Harvard Botanic Garden are very attractive at this season. A vast number of plants are raised and tested yearly, and while some are of botanical interest only, there are many beautiful plants of distinct horticultural value. A gardener will find few better places to study them.

Among many Columbines is seen the true Rocky Mountain species, Aquilegia cœrulea. From seed gathered in eastern gardens it becomes variable, hybridizing freely with the commoner kinds. Some of the Cœrulea × Chrysantha hybrids are handsome, and groups of all shades of red, white, yellow and blue, associated, have a striking effect. The Globe-flowers, Trollius, make an interesting group. Only T. Asiaticus and T. Europæus are in bloom now. Old Honesty, Lunaria biennis, is showy as one sees it here. But it is only a biennial, and soon becomes ragged. Viola declinata, var. losisepala, is pretty and distinct. Its color is reddish violet, almost a self, excepting only a white eye. Patches of Cerastiums, including a giant from Japan, afforded means of comparing the value of these low-growing evergreen Mouse-ears for garden effect. A clump of Helenium Hoopesii, with large orange-yellow, star-shaped flowers, caught one's eye in the distance, since there are few flowers of its color at this time. Bleeding Heart, Dicentra spectabilis, established its value as a garden plant when properly placed. Two little pink-flowered Erigerons, E. glabelliformis and E. Coulteri, struck me as likely to be useful plants for naturalizing in grass. They certainly would be pretty if they would do as well as their larger congener, E. Philadelphi-

cus. Verbascum Olympicum is the grandest of all the Mulleins. Its bold-branched spikes are closely covered with irregular salver-shaped lemon-colored flowers. The prominent violet-colored filaments and anthers, so conspicuous in nearly all the Verbascums, are scarcely noticeable in this one. The whole plant is densely covered with a sulphury pubescence. These Mulleins are scarcely distinguishable from the Celsias. Echium Caucasicum is a fine dark blue Boragewort. A most graceful spring-blooming plant is Amsonia Tabernæmontana. It grows about two feet high. Its terminal thrysoid panicles of blue flowers are delicately tinted with a metallic lustre. It succeeds only on moist subsoils, rooting deeply, and is impatient of removal. Primula Japonica has proved quite hardy on the rock garden, and is now in bloom. Podophyllum Emodi is out of bloom, and is developing its large and beautiful pod-like fruit. P. peltatum is now open. These are both interesting, if not exactly beautiful, plants with classical-looking leaves. Funkias here show their value as shade-plants, succeeding, Mr. Cameron tells me, where it is difficult to get anything else to grow. Orobus vernus is past bloom and now in the seed-pod. These Vetches are hard to establish, and appear to enjoy shade; the only chance of success is with seedlings. O. palustris is later in blooming, of a delicate purple color. The vernal Snowflake in bloom was a reminder of days gone by. It succeeds only in sheltered places. In shade also are several patches of Cypripedium pubescens. These plants will not succed on a dry subsoil. Vancouveria hexcandra is a low-growing and interesting member of the Barberry

Fig. 33.—Leucothoë recurva.—See page 224.

family. The only visible sign of the relationship is in the flowers, which are formed almost exactly like those of the Barberry. It is herbaceous, and the foliage in the autumn becomes bronzy and quite ornamental.

Wellesley, Mass. *T. D. Hatfield.*

Flower Garden Notes.

ONE must have a firm will these pleasant spring mornings to follow up closely the necessary cultural work, each night brings forth so many distractions of flower and foliage. It is much pleasanter to linger over the newly expanded charms of color and form than to do the necessary prosaic work.

In spite of a dry season the hybrid German Irises have flowered as profusely as usual, with no shortening of stems or decrease in size of flowers, and at about the accustomed season. The fragrance prevailing now is from masses of forms of Iris pallida, an Elder-like scent, this Iris being the most fragrant of the family, and the best strains being among the handsomest of the bearded Irises, both in form and coloring.

Of other Irises lately in flower, I. Germanica macrantha has been glorious with immense blue purple flowers about twice as large as the ordinary variety. The reddish purple flowers of I. Kochii are also bold, distinct and handsome. Of the varied Irises in a collection of these flowers perhaps the forms of I. variegata will usually prove the most attractive. These are flowers with yellow standards and usually reddish falls, and are mostly bright and attractive, though not of the largest size. Professor Forster's hybrid Iris Parvar (paradoxa × variegata), which has before been described in Garden and Forest, has again proved to be as reliable as its male parent. It has had no protection or special care in the border, and has shown none of the miffiness of its Oncocyclus parents, though resembling it much in foliage and still more in some features of the flowers, which are a beautiful dark vinous red. Another hybrid, Lupina × Ciengialti, did not show so much influence of the Oncocyclus parent and formed surface-creeping rhizomes, which unfortunately succumbed to a wet winter. This was a flower of a very odd hue, a degraded heliotrope. Lately I have had the pleasure of flowering a few more of Professor Forster's seedlings, which it may be interesting to note as a suggestion to growers who may have a fancy for hybridizing uncommon things. It is not possible to give more than a hint of the curious hues thus produced. I. Parkor (paradoxa × Korolkowi), with narrow foliage, flowered with a curious bloom, reddish purple with darker linings and dark signals, orbicular falls and rather modified standards—that is, not excessively large as compared with the falls. I. Korolkowi × vaga resembled closely one of the forms of I. Korolkowi, venosa, I think, a flower of small size, fawn color, with dark linings and beautiful styles of a golden brown, and in one stage with a distinct olive reflection. This hybrid produced apparently fertile seed-pods. The reverse cross, I. vaga × Korolkowi, bore flowers which were dissimilar in form and coloring, the latter being a light red-purple. The standards are tall and pointed. It is several years since I. vaga (Leichtlini) flowered here, and my memory does not serve for a close comparison. These plants must be soon dried off and kept dormant until late in the year. Another hybrid, I. Parsamb (paradoxa × sambucina), not yet flowered, may be expected to grow without special care, I. sambucina being as reliable as it is homely. Irises cross so readily and seed so freely that hybrids are produced with little trouble. There are countless hybrids of the bearded species, but there is still a wide and promising field among the newer species for interesting trials.

Fall-sown annual Poppies are now flowering as the spring seedlings are germinating. One cannot always carry over these fall seedlings from seed scattered in September, but in latitudes no more rigorous than this it is always worth while to make the trial at the risk of loss. Some seasons it is necessary to thin them out, in others few survive, but the survivors are strong plants, far better than can be produced by sowings at other times. Perennial Poppies now in flower are gorgeous, and usually even arrest the attention of those indifferent to any less conspicuous color, but they are not as handsome as the annual Tulip Poppy, P. glaucum, whose flowers, scarcely inferior in size, are of a most effective rich and satisfying crimson.

There does not seem to be any special reason why an amateur should take any unnecessary trouble with his garden, and it has always seemed to me that under this head was included the replanting of hardy Water-lilies in the tank boxes each season, most disagreeable and chilly work. My Nymphæas in the tanks are in ordinary soap boxes, and have not been replanted for three years. They are running riot now, flowers are plentiful and as large as the average, and there is more foliage than space on the water, so that it is fair to infer that these plants do not really require the manures rich in humus which are usually advised. This is not strange when one remembers that still waters, not too often changed, accumulate available plant-food from decay of insects and organic matter.

In the centre of my plant border is a Rose bush, now three or four feet high, covered with dainty pink and white single flowers not much over an inch in diameter. This Rose is remontant and bears several crops of flowers during the season. I notice that flower fanciers are quiet before this plant and are usually glad to pocket a few hips, which it bears plentifully. This Rose is the R. polyantha remontant introduced a few years ago, of which seeds are offered in the catalogues. It comes readily from seed, from which it flowers in three months, and the plants are perfectly hardy here. In three or four years it has had no winter-killed branches. The flowers vary in coloring and in number of petals.

Elizabeth, N. J. *J. N. Gerard.*

Nymphæa gigantea.

THE blue-flowered Nymphæa gigantea of Australia is unfortunate in having a specific name which is also applied to a variety of N. odorata. I have been unable to see anything very attractive in this variety of odorata, especially for Lily ponds where there is a limited water-surface. The common N. odorata is preferable, as it flowers profusely in smaller quarters than does its variety. The Australian species is undoubtedly one of the finest of the genus. Unlike any other kind, the flowers can be used either open or closed, for when once they open they close up in the evening in such a way that the outer covering only hides part of the petals. It is, therefore, very desirable for cutting. Unfortunately, this species has the reputation of being difficult to grow, and it is said that young plants go to sleep without any apparent cause; but so will any Nymphæa having tuberous roots. If the plants are kept in active growth all the time there is little danger of their going to rest. When starting the tuber into growth, it often makes one or two water leaves and then remains stationary for months. This was my experience at first, and I found that the tubers were planted too shallow in the soil, and when they did sprout, as they almost always do, with stolon-like growths, the roots did not get a chance to take hold of the soil, which as a rule is loose at the surface and very much mixed up with a confervoid growth. Two inches beneath the surface is a safe distance. As soon as the tuber develops two or three fairly good-sized leaves, it is an excellent plan to sever the stolon-like growth from the tuber and pot it carefully in loam and sand and grow it on in this way. If it has no check from a sudden change in the temperature of the water, it will form a blooming plant just as quickly as any of the Zanzibarensis varieties. The little tuber should be put back in the soil to sprout again, which it will do several times over, without any apparent diminution in vigor. In fact, I have sprouted a tuber more than a dozen times during a summer and kept it over till the next season, evidently as sound as ever. By keeping a few plants in a small state all the time we have an unceasing supply, and if one plant fails when put out there are others ready to take its place.

Botanic Garden, Washington, D. C. *G. W. Oliver.*

Rex Begonias.

THE popularity of these plants is more or less injured by the fact that quite accurate artificial imitations are so often seen. Of course, these shams can be easily detected by any close observer, but the real plants themselves have, to some eyes, a made-up artificial look, and the prevalence of counterfeits in shop windows helps to strengthen the impression that they are stiff, unnatural and undesirable. Nevertheless, many of them are really beautiful, rich in color and not devoid of grace in form and habit. The varieties of the large-leafed section of these Begonias B. Rex is the principal projenitor of, may be counted by the hundred, and new varieties are constantly being produced, all laying claim to some special points of superiority in coloring, form of foliage or habit of growth. Of somewhat recent introduction, and quite a departure in form of foliage, is Countess Louise Erdody, which has the two lobes at the base of the leaf wound in a spiral way suggesting the appearance of a snail's shell. The entire leaf shows a rich metallic lustre, the centre a dark silver shading to coppery rose toward the margin. The plant is a free grower and makes a striking specimen. Leaf-cutting is prob-

ably the most practicable method of increasing the newer and rarer sorts, but well-matured leaves should be selected, and after the stronger nerves on the under side of the leaf have been cut they should be laid in sharp clean sand, a few pebbles being placed on top to keep them down. The sand should be kept moist, but not sodden. Little plants soon begin to make their appearance on the surface of the leaf, but it takes some time before they attain much size. A much more speedy process for the older sorts, from which plenty of leaves can be obtained, is to cut away the principal part of the leaf, leaving only a little of the base, and about an inch of the stalk. If this is inserted in the propagating-bed like an ordinary cutting, roots will soon be emitted from the end of the leaf-stalk, while fresh growths will break away from the old base. By this method good-sized plants can be had in a much shorter time. Divisions of the plants may also be used as a means of increase where only a few are wanted.

Ordinary greenhouse treatment, with moderate shade and plenty of moisture, suits the general requirements of these plants. They like an open, well-enriched compost, with free drainage. During the early winter months they should be induced to rest by being kept moderately dry, and when the days begin to brighten and grow warmer they should be repotted and started afresh. It is not advisable to shake them out severely, but is better to remove only a little of the old soil and use a larger size pot. During the summer months they may be used for house decoration, for grouping with other plants around piazzas and other shady places, and for window boxes or vases, but they should never be exposed to the direct rays of the sun or they are apt to either burn or lose the more delicate tints of their foliage.

Tarrytown, N. Y. *William Scott.*

Chrysanthemums.—Plants intended for specimens have had their final shift, and are now well rooted in the new soil. Their growth will be rapid from this time onward, and frequent toppings will be required to keep them well balanced. We shall soon select the most promising plants and spread them into shape with a few of last year's stakes. These will be removed when the final tying out is done. When these bushy plants are left unspread the central stems are weakened and the leaves turn yellow and decay. Light develops them, and the object particularly now is to produce as many growing shoots as possible as a foundation for the future plant. Only the tips of the shoots should be taken, and none must be allowed to get away. When this happens by an oversight, and it is necessary to cut out two or three inches to bring the shoot back to the level of the others, it will be noticed that such shoots rarely break well. I am frequently asked how I manage to keep my plants so even and bushy, and how often I top them. The stopping is done every day without fail. Liquid-manure must not be given until the plants are quite vigorous and becoming pot-bound. A month hence will be time enough. Cuttings intended for single blooms ought to be ready for potting or boxing off, as is most convenient. These, again, will be ready for benching by the 20th of June. First-class blooms can be grown from plantings made at this date, and medium-sized ones from plantings made a month later. This year we are growing a number of Chrysanthemums in eight-inch pots intended to carry from ten to a dozen medium-sized blooms. Large blooms are not available for all kinds of decoration, and medium-sized ones are useful for dinner-table work.

Wellesley, Mass. *T. D. H.*

Correspondence.

A New Hybrid Canna.

To the Editor of GARDEN AND FOREST:

Sir,—During a recent visit to Santa Rosa, California, I called upon Luther Burbank, and among other things was shown a new hybrid Canna which, when introduced, will probably create as great a sensation as Madame Crozy did. This plant is not a seedling of the well-known strains so deservedly popular, but is a hybrid between Madame Crozy, which has so long been the standard of excellence, and Canna flaccida.

Canna flaccida is a native of Florida, of a dwarf habit, and not a strong grower. Its exquisite light yellow flowers would, in spite of these defects, give it a high place in the garden were they not so very ephemeral. So frail and fleeting are they that an hour in the morning often measures their term of existence. I remember well that it was days before I got a sight of the flowers on a blooming plant of my own. The flower of C. flaccida is unique among Cannas in having something of the grace of an Iris and a peculiar silvery sheen that is very beautiful.

For years Mr. Burbank has been trying to make a cross in which some of these fine qualities of Canna flaccida might be united with the vigor and lasting qualities of the Crozy strain, but while many seedlings were grown and bloomed, all, with a pertinacity which is so often the despair of the hybridizer, followed one of the parents, and that Madame Crozy.

Last summer, in the third generation of hybridized seedlings, the new seedling appeared, and any one knowing Canna flaccida would have instantly recognized its parentage. Only a single seedling among thousands, yet Mr. Burbank feels that it well repays the trouble.

In the new and as yet nameless Canna are united, happily, the Iris-like form, the satiny sheen and the large size of flower of Canna flaccida, while the Crozy blood, giving to the plant a vigor of growth even surpassing either parent, and a lasting quality to the flowers about the same as Crozy possesses, is only apparent in the coloring in a lemon more intense than in flaccida, and a few reddish spots in the throat.

A marked feature of the new race is the development of some of the minor petals which in the Crozy strain are all but rudimentary. In the new Canna they are broad and flat, giving a bold fullness of outline until now quite unknown in Cannas.

Considering the predominance of Canna flaccida in this seedling, the most critical point is its keeping qualities. In this regard it is not quite the equal of Crozy. The flower opens up a clear lemon-yellow never before known in Cannas, and is unspotted, except for a few dots well in the throat. With age it becomes lighter in color, and in ordinary weather will last about as long as Madame Crozy, and I think for exhibition it is superior to any other Canna.

The foliage is of a light green, the growth a little stronger than that of Madame Crozy, the flowers well carried above the leaves and somewhat larger than those of the Crozy type.

The breadth of petal in the new strain is a marked feature which we can expect future hybridizers to still further develop.

Ukiah, Calif. *Carl Purdy.*

[The photograph of a flower of this new hybrid with one of Madame Crozy for comparison shows it to be almost identical with the variety Austria, which we have already described, although there seems to be more scarlet in the lower petal than is found in the flowers of Austria. It seems strange that in such widely separated countries Mr. Burbank in California and Dammann in Italy should have raised plants at about the same time which are so nearly identical, but these coincidences are common. When seen together the two plants may show differences which we cannot observe in the photograph, but their comparative value, of course, can only be determined by actual trial. Dammann's hybrids, Italia and Austria, have raised the standard of perfection in the flowers of these plants, but the question whether they will have substance enough to stand out-of-doors in this climate has not been settled, and it may be that the southern blood derived from C. flaccida will be seen in a lack of sturdiness. It is to be hoped that an opportunity will soon be offered to try the California hybrid by the side of the Italian one.—ED.]

The Stanford University Grounds.

To the Editor of GARDEN AND FOREST:

Sir,—The other day I visited Palo Alto, in Santa Clara County, and spent some time in the beautiful grounds which were the pride of the late Senator Stanford. Much has been written about the University, but I have seldom seen anything in print about the possibilities for future work in forestry and horticultural experiments offered by the great Palo Alto estate. The original San Francisquito Rancho of 1,400 acres was added to by Senator Stanford at various times since 1870, until the property now embraces over 8,000 acres, all of which is dedicated to the uses of the University. The University also owns the famous Vina Ranch of 55,000 acres, in Tehama County, and the Ridley Ranch of 21,000 acres, in Butte County. It is evident that when Stanford University is ready to establish courses in forestry, viticulture, pomology or any and all other departments of agricultural science, whatever lands are needed can easily be set apart, while the operations of the various farm divisions can be made to give much practical training to students. All the estates—in part valley, in part foot-hills—offer a very wide range of soils and climates. In these respects, as

in many others, Stanford University is especially fortunate. The home estate, Palo Alto, lies at the base of the Coast Range foot-hills, near the southern line of Santa Clara County. I have heard this portion of the mountains of the backgrounds called the Sierra Morena; in fact, the whole Coast Range easily divides into a multitude of smaller groups, separated by valleys and cañons.

The site of the University is in a land of Oaks, both deciduous and evergreen. One lordly group of Redwoods, thrust far out from its companions, twenty miles from the coniferous forests, lying toward the sea and ten miles from the nearest hills, has been a landmark from earliest Spanish days. Hence arose the name of the estate, Palo Alto—tall tree. Spanish priests and explorers of the closing years of the eighteenth century, riding hour after hour through the wild Mustard and chapparal of the unfenced valley between Santa Clara Mission and the drifting dunes of Mission Dolores, well knew this great evergreen spire, 200 feet high, at the crossing of the San Francisquito. Once it was a group growing from a mass of roots, as is the fashion of Redwoods. We have a record of three trees standing among lesser ones, then of two, but now there is only one, the sentinel of the whole valley, the University tree, par excellence. It was long ago bulwarked with great care against winter floods, and it has passed into college literature. Thus Sequoia sempervirens has become the guardian tree of Stanford, even as Quercus agrifolia is the preëminent tree of Berkeley.

Senator Stanford was always a lover of trees. He spent much time upon his plantations, and he never allowed a healthy Oak-tree to be removed. About three hundred acres of the richest valley land at Palo Alto were long ago planted with a great variety of shrubs and trees. A large part of these shrubberies and woodlands can be made of immediate scientific value. Nearly every species which the various nurseries of California can furnish is represented here, and doubtless there is much that it would be hard to find elsewhere, for Senator Stanford was a liberal importer of rare plants. The Arizona garden, for instance, could only be duplicated at very great expense, because Senator Stanford's opportunities as a railroad man were unusual. He was able to send men out into the desert and collect the finest and largest specimens of desert plants, bringing them in wagons to the nearest point on the railroad, where they could be loaded on his freight cars.

In driving over the grounds one sees superb specimens of both the Sequoias and of nearly all the other California conifers. Among many fine Araucarias, I noted a noble Araucaria Bidwilli, with trunk fourteen inches in diameter and shaft rising to a height of fifty feet. Very large Hawthorns in full bloom, groups of fruit-laden Oranges and Lemons and many brilliant flowering trees give color to the May-time woodland. Nothing is as yet labeled, and the University botanists and foresters of the future will have a great deal to do in putting this raw material in shape. But it is magnificent material.

The general impression, which is all I have undertaken to give in this brief article, is that of enormous undeveloped resources for future educational work in the right hands at the right time. The estate already has greenhouses and propagating-houses, which can be enlarged when necessary. All in all, the garden, the shrubberies, the woodland, the orchards and vineyards, taken collectively, are equivalent, in some respects, to a twenty years' start. This is chiefly because the Stanford estate was laid out on a grand scale to begin with, and is nowhere cramped.

Niles, Calif. *Charles Howard Shinn.*

[Some account of the original design of these grounds by Mr. Olmsted, together with a diagram, will be found in vol. i. of Garden and Forest, page 507.—Ed.]

Elæagnus multiflora in Wisconsin.

To the Editor of Garden and Forest:

Sir,—In the spring of 1892, six plants of this shrub, the Elæagnus longipes of many gardens, were set on the grounds of the Wisconsin Agricultural Experiment Station at Madison. Two of these plants were set in the lawn, and they have been protected each winter by covering with earth or coarse manure. The other four were set in the nursery and have received no winter protection other than that afforded by snow a portion of the time. The experience gained from these two plantings enables us to judge something as to the climatic conditions that this plant is capable of enduring.

The winter of 1893-4 was considered rather a mild one for this locality. We had one cold period during which the minimum thermometer registered below zero each day for six days in succession, the lowest point reached being eighteen degrees below zero. The unprotected plants in the nursery killed back a little at the tips and produced no flowers the following spring, but none of them were seriously injured. The protected plants on the lawn were alive to the terminal bud and yielded a fine crop of fruit the following summer.

The next winter, 1894-5, was more severe. During nineteen consecutive days, in January and February, the minimum thermometer registered below zero every day but one, when it registered plus two degrees. Three of these days the mercury descended to fourteen degrees below zero, one to sixteen, one to seventeen and one to twenty-one degrees below, the last being the lowest point reached during the winter. The snow in the nursery during this cold period was deep enough to cover about the lower half of the stems of the Elæagnus shrubs, and all of the part that reached above the snow was killed, while that below the snow-line not only survived but bloomed freely the following spring. The protected plants showed no injury whatever.

The past winter was unusually mild. The mercury was below zero on eleven different days, but did not register lower than minus thirteen degrees. The plants in the nursery killed back a very little at the tips, but the flower-buds are uninjured.

From these observations we can summarize as follows:

With a minimum of minus thirteen degrees flower-buds were uninjured and stems were very little injured. With a minimum of minus eighteen degrees, wood was not much injured, but flower-buds were killed. With a minimum of minus twenty-one degrees, accompanied by prolonged cold, exposed wood was destroyed, but wood and flower-buds covered with snow were uninjured. No injury has resulted at any time where protection of earth or coarse manure was given.

I find that seeds of Elæagnus multiflora buried in sand beneath the soil germinate freely the following spring, especially when washed from the pulp. The seedlings, however, appear quite delicate, and I think, with us, must be taken up in autumn and wintered in the cellar. At least a covering of earth during the past mild winter was not sufficient to save ours from destruction.

It is unfortunate that the fruit of Elæagnus multiflora has so much of astringency. There is no reason to doubt, however, that varieties may be obtained that are without this quality, and then we shall have a valuable addition to the list of small fruits which can be depended on in this climate.

University of Wisconsin, Madison, Wis. *E. S. Goff.*

A Novel Method of Tree-planting.

To the Editor of Garden and Forest:

Sir,—The obstacles to fruit-growing on the plains have led to various methods of culture peculiar to the region, and many experiments have been and are still being tried in the hope of more fully overcoming these obstacles. One of the most noteworthy of these is that known in Nebraska as the Leonard method of tree-planting, from the name of the grower advocating it. The greater part of this region is underlaid by a subsoil that, while, perhaps, not so hard as that commonly found in the eastern states, seems to be so hard that the roots of Apple-trees do not penetrate it to any great extent, but spread out near the surface. This, taken in connection with the small rainfall and greater evaporation of the region, seems to be unfavorable to the full development, health and longevity of the tree. The new method of planting is based on the theory that if it is possible to penetrate this subsoil and reach a softer and moister layer beneath, the tree will have access to more water and be able to form a deeper root-system, thereby becoming less subject to the influences of surface and atmospheric conditions. Accordingly large holes, six or eight feet in diameter, are dug deep enough to get through the harder subsoil layers, if possible. If this cannot be done the hole is dug six or eight feet deep, then from the bottom a hole is bored with a post auger, three or four feet deeper, reaching a moister layer of soil, if possible. The whole is then filled with surface-soil, raising it ten or twelve inches above the level of the surface, to allow for settling, and the tree planted in this position. The method has not been in use long enough to determine its value, but it is being watched with a great deal of interest. Trees planted in this way have made a very promising and vigorous growth, but it should be added that Mr. Leonard gives ideal cultivation, and it is impossible to say how much of this growth would be brought about by the cultivation alone. In order to give the matter a comparative test, Apple, Plum and Cherry trees have been planted in this way at the station-farm the present spring, while alternate trees in the

same row have been planted in the ordinary way. Here the methods of culture will be the same for each, and it is to be hoped the merits of the system will be shown. It will be interesting to remove some of these trees as they grow older, in order to see what effect planting in such an immense earthen flower-pot will have upon the habit of root-growth. In this planting the holes were dug about six feet in diameter and six feet deep, with a post auger-hole three feet deep in the bottom of each.

No doubt, most orchardists will say at once that this involves altogether too much work, and it does mean a good deal of work, but it is less expensive than irrigation, which we may sometimes think would bring us almost ideal conditions. These holes can be dug and filled at a cost not exceeding a dollar a tree. Now, reflect that a good Apple-tree in full bearing is worth at least as much as a good dairy cow, and then ask how many dairymen would hesitate to pay one dollar more for a healthy, vigorous, productive cow than they would for one not quite her equal. The important question is not the expense of doing the work, but the effect which such planting will have on the subsequent life of the tree, and no one can answer that question satisfactorily ahead of time.

Agricultural College, Lincoln, Nebraska. *Fred W. Card.*

Larch Sack-bearer (Coleophora Laricella).

To the Editor of GARDEN AND FOREST:

Sir,—In the spring of 1894 I noticed that the tips of the leaves of the trees in my Larch plantation of five acres had become yellow or brown, as if touched by frost, and later on in many cases the whole leaf dying. This continued through the growing season, many of the trees attempting to put forth a new growth. Not being able myself to discover the cause of this trouble, I sent samples of the twigs and leaves to Professor C. H. Fernald, of the State Agricultural College, who informed me that they were infested with the Larch sack-bearer, as he named it. The caterpillar was so minute and so concealed under cover of the leaf that I had not observed it. On reëxamining the trees after this explanation I soon discovered the caterpillars in countless numbers; they bore into the needles, so that the upper ends shrivel up and turn yellow and brown. Professor Fernald wrote me that this insect was first reported in this country by Dr. Hagen in 1886 on European Larches in Northampton, Massachusetts. He also stated that he had observed it on some Larches in Amherst, but had never heard of it elsewhere until my trees were brought to his notice. In 1895 the insects were apparently undiminished in numbers, and this spring they have appeared again; as a consequence, the growth of the trees has been checked.

My trees, although European Larches, were not imported, but came from Douglas, Illinois. The question arises, where did these pests come from? Have they been slowly increasing in numbers from a small and unnoticeable family, or has the horde dropped down from some unknown quarter? On page 311 of vol. iv. of Schlich's *Manual of Forestry* may be found the best description of this moth that I have seen. It is common in Great Britain and Germany. As to remedial measures not much has been attempted on account of the magnitude of the task. On one section, however, the lower branches have been cut off and burnt.

Boston, Mass. *J. D. W. French.*

Planting in the Boston Parks.

To the Editor of GARDEN AND FOREST:

Sir,—Two years ago I wrote to your journal about the care of the Boston parks; since that time no improvement has taken place. The most conspicuous illustration of what I mean can be seen in that section of the Back Bay Fens nearest the city. For some reason this section was planted with a general mixture of anything and everything that was at hand, and a more curious collection it would be hard to imagine. Garden shrubs are crowded in with Spruces, showy perennials appear in most unexpected and inappropriate places, and just now weeds and dead wood abound in the most prominent portions.

The use of certain garden shrubs on the edge of a marsh seems to be rather questionable, but admitting their appropriateness, surely if they are to remain some care should be taken of them. At present, crowded in among plants of coarser growth, some dead and others half-covered with deadwood, they present a truly pitiable appearance. In many cases the dangerous practice of planting strong-growing vines among shrubs has been indulged in to a great extent and the evil results are already apparent, so that it really seems as if Boston would be better off if her parks were half as large and twice as well taken care of.

Trained men are needed to take care of our parks after they are planted, a constant thinning and pruning of trees and shrubs must be kept up, and for such work men of skill and experience are needed.

In the meanwhile we keep on in the same way, every year extending our park system (already too large), planting more and more ground and leaving our old plantations to fight it out among themselves.

Wellesley, Mass. *H. S. H.*

Why Rhododendrons do not Flower.

To the Editor of GARDEN AND FOREST:

Sir,—I have read your note in GARDEN AND FOREST on the influence of the past winter on the flower-buds of Rhododendrons and other shrubs. I am convinced that Rhododendron buds in this neighborhood were injured in the severe cold snap of the 10th of October, when the thermometer fell suddenly to twenty-three degrees, Fahrenheit, and the most of the mischief was done at that time. The buds on several half-hardy varieties here, which were housed in cellars on the first of November, have been more or less injured, some varieties losing all their buds and others having only a few flowers in a truss. This must have been done before the plants were moved into their winter quarters. I remember that the same thing happened ten or twelve years ago.

Wellesley, Mass. *H. H. Hunnewell.*

Recent Publications.

A Traveller's Notes. By James Herbert Veitch, F.L.S., F.R.H.S. Published for private circulation by James Veitch & Sons, Royal Exotic Nursery, Chelsea.

All persons who keep themselves acquainted with current horticultural literature will remember the series of letters from the far east which appeared three or four years ago in *The Gardeners' Chronicle.* Mr. Veitch has brough these together, revised them, added certain connecting links which make the narrative continuous, so that the text and notes, with the illustrations, make altogether a quarto volume of considerably more than two hundred pages. The tour made by the author was through India, Malaysia, Japan, Corea, the Australian colonies and New Zealand, and the work is chiefly descriptive of the vegetation of those regions observed from a horticultural point of view. Mr. Veitch's object was to study the conditions under which the plants of these countries have been developed, with the view of learning something about their cultural requirements when transplanted into British gardens, and also to make a search for such new plants as might seem worthy of introduction into cultivation. On the first page of the text we read of impressive groves of Cocoanut Palms, and all through the book the reader is among plants, garden plants generally, with descriptions of their appearance, habits and uses. Wherever a botanic garden was found its treasures were carefully noted, and one who takes even a cursory glance through these pages will get a fair idea of what trees and plants are most used for decorative purposes in the countries through which Mr. Veitch's long journey extended. There is an interesting map and numerous photogravures and reproductions of photographs by the author, many of which are remarkable, both for the interest of the subject and skill in treatment. Of course, they are largely devoted to plant life, but incidentally we see much of the splendid architecture and scenery of the far east. The pictures are beautifully printed and the mechanical execution of the book throughout is unusually attractive.

Notes.

The *Agricultural Gazette*, of New South Wales, gives the following as an example of the durability of the Yellow Box timber, Eucalyptus melliodora: A tree was cut down in March, 1849, and a log fifteen feet long and fifteen inches in diameter was placed while green as the ground plate or sleeper to support the posts of a veranda. About three-fourths of it was under ground, where it has remained ever since, and it is apparently as sound as the day it was cut. Another log of the

same kind of tree, which had been used as a sleeper and has been partly imbedded in the ground for forty-three years, does not show any decay even in the sapwood.

Virgilia trees are flowering in the parks and gardens about New York this year with unusual profusion. The weight of the blossoms is so great as to give the branches a still more drooping habit even than they naturally possess, and as they wave slowly in the wind the long racemes of pure white flowers among the light green and delicate foliage make a picture which cannot be excelled for beauty and grace, especially when seen against some dark background like a mass of conifers.

Since the account of Mr. Burbank's new Canna, which appears in the correspondence columns of this issue, was in type, we have again received from Mr. Frank Pierson specimen flowers of Austria, the new Italian hybrid. The color is a luminous golden-yellow, very pure and lighter in tone than that of the Canna Italia and but faintly shaded at the base of the petals. The splendid flowers stand above the foliage on long stems; they are flat, spreading, bold in appearance and nearly six inches across.

During the five business days of last week 2,420 cases of evaporated apples were received by wholesale merchants in this city, and 2,226 packages of other dried fruits. Since September 1st 159,061 cases of evaporated apples have been handled in this market, and 678,221 packages of other sorts of dried fruits. During last week 7,096 packages of evaporated and dried fruits left this port, and since the season began, nine months ago, 323,780 packages have been exported. Besides apples, evaporated and dried raspberries, blackberries, huckleberries, cherries, plums, prunes, peaches, apricots are now being sold.

Willow Twig, Cooper's Market, Ben Davis and Roxbury Russet were comprised in 1,397 barrels of apples shipped to this city during last week. The highest grade of Willow Twig brings $5.75 a barrel at wholesale; Ben Davis, $5.00, and Roxbury Russet, $3.25. Cherries from near-by points are offered at fifteen cents a pound, retail. Cultivated blackberries of good size and quality, from North Carolina, cost twenty cents, and huckleberries, from the same state, an equal price. Green gooseberries are in limited supply, and sell for fifteen cents a quart. The first watermelons of the season came from Florida early last week, and sold at from sixty to seventy-five cents, wholesale.

One of the most important vegetable productions of Persia is the crop of dates which are grown to great perfection in many parts of the country. The Date Palms begin to yield at about three years of age, reaching their prime at thirty, and a good yield for one tree is from eighty to one hundred pounds. The flowers are fertilized by hand, one male tree supplying pollen for perhaps forty pistillate trees. The dates used for export are those that grow at the summit of the trees. From the action of the sun they become hard and dry and are thus easily packed, while those on the lower branches remain soft and are kept for local consumption. The exports of dates of the country could be easily doubled by planting fresh groves of Palm.

The first sugar corn of the season, from Florida, is now offered in our markets at seventy-five cents a dozen ears. Peas are coming from New Jersey, Maryland and Virginia. All the summer vegetables, but Lima beans, may now be had well grown and ripened, excepting tomatoes, which for the past few weeks have been poorly colored. Potatoes have been plentiful and cheap, the best Bermudas costing $4.00 a barrel at wholesale, those from Florida $3.00, and from New Orleans $2.50. As many as 15,000 barrels of this staple arrived from the south during last week. Owing to dry weather the bulk of the stock is small. The supply of domestic potatoes from last year is still considerable. During five days of last week 40,806 barrels of the latter were received in this city, besides 2,875 barrels from Bermuda and the West Indies. In the same time Bermuda sent 21,205 crates of onions, and 5,967 bags came from Egypt.

One of the remarkable and often observed correlations between the scent of flowers and the animals who visit them is the development of the floral odor just at the time when the insects fly. Professor Kerner cites the example of certain species of Honeysuckle, Petunia, some Orchids and other plants which smell faintly or not at all in the daytime, but give off abundant odor between sunset and midnight, just when the insects fly which feed on them. Various Pinks and Pelargoniums, which are visited by small night moths, exhale a strong odor of Hyacinth at twilight, but give off no scent during the day. On the other hand, many flowers which are visited by bees and butterflies in the daytime become scentless at sunset, like the ornamental Clover, Trifolium resupinatum, which smells of honey in the sunshine and becomes scentless when the bees return to their hives in the night. The same is true of the Grass of Parnassus, and a species of Daphne, which grows in the Pyrenees and emits a delicate violet odor during the day, but has no smell whatever after nightfall.

If the fruit-growers of the country suffer from diseased trees and vines, which can be prevented by spraying, it will be their own fault, as the literature which gives full directions for the prevention and cure of these ordinary diseases is increasing every month. A farmers' bulletin, entitled Spraying for Fruit Diseases, contains the latest authoritative directions which we have seen. It is written by Professor Galloway, Chief of the Division of Vegetable Physiology and Pathology, and gives the method of preparing the various fungicides, the special qualities of each and the proper time and the best means of applying them. The various diseases of the Grape, Apple, Pear, Quince, Cherry and Plum which yield to treatment are also briefly, but accurately, described, and all this within the compass of a dozen pages. In the final paragraph fruit-growers are urged to bear constantly in mind that the treatments are not curative, but preventive, and that it is, therefore, necessary that the spraying should be made at the proper time and in a thorough manner. Of course, a saving of both time and money will follow where experienced and trustworthy labor and first-class machinery are used, and the plants will be more certainly protected. Poor help, cheap makeshift machinery and lack of personal and intelligent supervision by the fruit grower himself are the chief causes of failure.

We have been interested in a little pamphlet on Potato Culture on the Island of Jersey, written by the Rev. Charles B. Merrill, of Beloit, Wisconsin, and published at Medina, Ohio. It is a complete description of the methods of raising Potatoes for the great markets of London and Liverpool in the Channel Islands, and shows how what is called high-pressure gardening can be made to pay on small areas. The details of the practice in the Island of Jersey might, perhaps, not be strictly adapted to our different climates and soils, but as the principles of plant growth are the same the world over there is much in these pages to make American farmers reflective. In a soil which has been cultivated for a thousand years and which has grown richer all the time, where careful tillage makes it easy to work, and clean cultivation has practically exterminated weeds, the Jersey farmer has a great advantage to begin with, but he does not neglect his crops for this reason, but gives them all the more care. He mellows the soil deeply, fertilizes it freely with manures which have been made as fine as possible by rotting, grinding or liquidizing, spares no expense to secure the best of seed, of which he plants thirty or forty bushels to the acre, and sets the tubers in a particular way in every hill, cultivates thoroughly, harvests with the greatest of care, markets the crop as soon as it is gathered, and then hauls it over the smoothest of roads so that not a single potato is bruised or chafed on the road. The seed is never cut, but the whole tuber is planted, and then all the vigor is thrown into two or three strong shoots, rather than into a dozen weak ones. The result of all this care is abundant and paying crops. Seven thousand and seven acres, or one-third of the crop-land of the whole island, was planted in 1894, and 60,605 tons were exported, with 15,000 tons kept at home for seed and food. The average yield of the whole per acre was 333 bushels, or more than ten tons. The average price received an acre was $343, or an average net cash of $260. The highest yields to the acre were 500 to 600 bushels, and the highest receipts to the acre were from $500 to $600. This was not an exceptional year, but for twelve years past the yields and prices have ranged about the same. In other words, during these twelve years more than twenty millions of dollars—that is, more than $300 for each acre of the Potato area every year have been brought into this country. Potato-culture is such a settled and sure source of profit that it seems to have no element of experiment or uncertainty, so that the cash rents of land range from $25 to $65 an acre a year, and the lands sell for from $600 to $1,500 an acre, if they are offered, which is rarely done, except because of death or misfortune. Though most of the farmers till their own land, yet applications for rent are continuous, and farmers whose fields are in fine condition have been offered and have refused $70 an acre annual rent.